Glossary

Acceptance testing: Determining that an EHR meets predetermined performance criteria.

Access: The ability of a subject to view, change, or communicate with an object in a computer system.

Access control: The technical means to assign authorized users access to systems, applications, and specific information. In healthcare, access control is often designated as user based (access dependent only on who the person is who is accessing data), role based (access based not only on who the person is, but also on the role of that individual at the time of access, such as attending physician, consultant), or context based (access controlled based on who the person is, his or her role, and the specific data elements he or she has authority to access).

Access management: The process wherein a user is granted permission to be assigned access to systems, applications, and specific information, and where such access is removed upon user termination or modified when a user's job or role changes.

Accredited Standards Committee (ASC) X12N: A standards development organization, accredited by the American National Standards Institute that develops and maintains standards for the electronic exchange of business transactions.

Accuracy: A characteristic of data that are free from error, up-to-date, and representative of relevant fact.

Acute care: Medical care of a limited duration that is provided for patients who become temporary residents in an inpatient hospital setting to diagnose and/or treat an injury or short term illness.

Adverse drug event (ADE): An injury cause by medical management and that resulted in measurable disability.

Agency for Healthcare Research and Quality (AHRQ): Agency within the U.S. Department of Health and Human Services that promulgates treatment guidelines and supports development of healthcare informatics standards.

Aggregate data: Data extracted from individual health records and combined to form information about groups of patients that can be compared and analyzed. The information may be de-identified or represent a limited data set.

Alerts: Software-generated warnings based on a set of clinical rules built into a computer system. Alerts often display on a computer screen but also may be sent to a pager or other device. An alarm is a similar type of warning, but is usually generated from an automated medical device.

Algorithm: A procedure for solving a mathematical problem in a finite number of steps that frequently involves repetition of an operation.

Ambulatory care: Preventive or corrective healthcare services provided on a non-resident basis in a provider's office, clinic setting, or hospital outpatient area.

American National Standards Institute (ANSI): Organization that accredits all U.S. standards development organizations (SDOs) to ensure that they are following due process in promulgating standards. The ANSI Healthcare Informatics Standards Board (HISB) is a group within ANSI that coordinates the development of standards for the exchange of healthcare information.

ASTM International (ASTM E31—Healthcare Informatics): A standards development organization that has been in existence for more than one hundred years. Its primary focus has been on the testing of materials to ensure their consistency. For example, motor oil is graded according to ASTM standards. E31 is a committee within ASTM that creates standards on the content and structure of EHR systems or their components, confidentiality policies and procedures for health information, health data security, and healthcare transcription.

Analog: Data that are not represented in discrete format (binary patterns of voltage), but rather based on waveforms.

Ancillary departments: Within healthcare organizations, those departments that provide services in support of direct patient care, such as radiology, pharmacy, laboratory, and many others.

Anecdotal benefits: Benefits that are very difficult to quantify and generally are described by relating specific examples.

Application service provider (ASP): A third-party service company that manages, delivers, and remotely hosts standardized software-based services to customers across a wide-area network from a central data center through an outsourcing contract based on a fixed, monthly usage or transaction-based pricing. This is a way for organizations to outsource some or almost all aspects of their information technology needs.

Architecture: The configuration, structure, and relationships of hardware (the machinery of the computer including input/output devices, storage devices, and so on) in an information system. An open-system's architecture employs nonproprietary standards to permit many kinds of software to be used.

Asynchronous transfer mode (ATM): A topology for transmitting data across large wide-area networks.

Audit trail: The chronological set of records that provides evidence of information system activity. Data are collected about every system event (log-ins and log-outs, file accesses) and used to facilitate the determination of security violations.

Authentication: Proof of authorship that ensures, as much as possible, that log-ins and messages from a user originate from an authorized source. A user can authenticate him- or herself in one of three ways: by something the user knows (password), by something the user has (computer token), or by something the user provides (a written signature or fingerprint).

Authorization: The granting of permission to disclose confidential information.

Backbone: A high-speed medium used as the main trunk in a computer network to transmit high volumes of traffic.

Backup: The process of ensuring that a copy of all software and data is maintained for use should the primary source become compromised.

Backward compatibility: The capability of a software or hardware product to work with earlier versions of itself.

Balanced scorecards: A performance-measuring method that focuses on tracking key metrics grouped according to a set of broad performance areas. It serves as a framework for unifying an organization around common goals, consistent definitions, and measurements for the purpose of performance improvement.

Bandwidth: The range of frequencies a device or communication medium is capable of carrying.

Bar code: A representation of data that consists of light and dark elements that are machine-readable.

Bar coding: Machine-readable representation of data. Bar codes are read by a scanner that passes over the code and maps it to corresponding data, such as a patient's name.

Baseline: A set of data collected to describe the current state of a process or system. Baseline data are compared to data collected after a change has taken place to determine the impact of change.

Batch processing: The collection of computer tasks to run at one time. This was common in mainframe systems where the user did not interact with the computer in real time; but, instead, data were processed, often at night, and produced time-delayed output.

Benchmarking: A comparison of performance against a standard or point of excellence, either within the organization (for example, from year to year) or among organizations on specified variables (for example, LOS, days in A/R, cost per DRG).

Benefits portfolio: A set of quantifiable benefits including both monetary and nonmonetary advantages (such as improvements in productivity, turnover rate, quality indicators).

Benefits realization study: An analysis of whether expected benefits are actually achieved after a change has been implemented.

Biometrics: The physical characteristics of users (such as fingerprints, voiceprints, retinal scans, iris traits) that systems store and use to authenticate identity before allowing the user access to a system.

Breach of confidentiality: A violation of a (formal or implied) contract in which private information belonging to one party, but entrusted to another party, is disclosed by that individual without the consent of the party to whom the information pertains; an unauthorized disclosure of confidential information.

Broadband: A type of communications media that can transmit multiple channels of data simultaneously.

Browser: A program that provides a way to view and read the documents available on the World Wide Web.

Bugs: Idiosyncrasies in software that prevent smooth application function.

Business case: An economic argument, or justification, usually for a capital expenditure such as an EHR system.

Business resumption: Similar to disaster recovery, the procedure for returning a computer system to its full functionality after unscheduled downtime.

Business rules: The policies that guide an organization's processes. For example, there may be business rules that dictate the time period in which a response to an alert or page must occur.

C+: A high-level programming language that enables programmers to write software instructions that can be translated into machine language to run on different types of computers.

Cache: A special high-speed storage mechanism in either a reserved section of the main memory of a computer or an independent high-speed storage device.

Call center: A central access point to healthcare services in which clinical decision-making algorithms generate a series of questions designed to help a nurse assess a caller's healthcare condition and direct the caller to the appropriate level of service.

Capital budget: A plan of proposed outlays for acquiring long-term assets and sources of funds to finance them.

Capitation: A prepaid, fixed amount that a healthcare organization receives for each person enrolled in certain managed care contracts, regardless of the resources used to treat the person.

Caregiver (also clinician): In this reference, all professionals (physicians, nurses, technologists, therapists, and others) who provide care directly to patients. Caregivers who are nonprofessionals but take care of relatives, friends, or clients or who are themselves patients and assume the role of caregiver in self-care are sometimes distinguished from clinicians who are specially trained professionals. This distinction is valid but not made in this book.

Care plans: Procedures for performing healthcare for a specified patient.

Case law: Unwritten law originating from court decisions where no applicable statute exists; also known as common law.

Case management: The ongoing, concurrent review performed by clinical professionals to ensure the necessity and effectiveness of the clinical service being provided to a patient. Also, the process that integrates and coordinates patient care across a continuum of care settings or the process of developing a specific care plan for a patient that serves as a communication tool to improve quality of care and reduce cost.

Cash flow: Receipts less disbursements; the availability of money to pay the organization's bills (accounts payable [A/P]).

Certificate authority (CA): An independent licensing agency that vouches for a person's identity in encrypted electronic communications. Acting as a type of electronic notary public, a CA verifies and stores a sender's public and private encryption keys (digital signature) and issues a digital certificate, or "seal of authenticity," to the recipient.

Certification: The evaluation performed that establishes the extent to which a particular computer system, network design, or application implementation meets a prespecified set of requirements.

Change management: The formal process of introducing change, getting it adopted, and diffusing it throughout the organization. The pace at which adoption and diffusion can be expected to occur can be plotted on a graph and are referred to as adoption curve and diffusion curve, respectively.

Chart: As a noun, refers to the health record of a patient; as a verb, refers to documenting information about a patient in a health record. *See also* documentation.

Checksum: Digits or bits summed according to arbitrary rules and used to verify the integrity of data. A check digit is the resultant representation of a checksum operation.

Classification: A system that arranges like or related clinical entities for easy retrieval.

Client/server: A computer architecture in which multiple computers (clients) are connected to other computers (servers) from which data are received and application programs are driven.

Clinical decision support system (CDSS): The use of automated rules based on clinical evidence to converge information and provide knowledge to assist in healthcare delivery.

Clinical Context Object Workgroup (CCOW): A standard protocol developed by HL7 to allow clinical applications to share information at the point of care.

Clinical guidelines/protocols: With clinical care plans and clinical pathways, a predetermined method of performing healthcare for a specific disease or other clinical situation based on clinical evidence that the method provides high-quality and cost-effective healthcare; also called treatment guidelines/protocols.

Clinical information system (CIS): A category of health information systems used to support direct patient care.

Clinical messaging: The function of electronically delivering data and automating the work flow around the management of clinical data.

Clinical trial: A research study in which the effectiveness of a new drug or treatment protocol that has met the initial set of laboratory requirements for safety is provided to one group of human subjects in a clinical setting, and the outcomes of that group then are compared with those of a control or comparison group that did not receive the same drug or treatment.

Clinician: *See* caregiver.

Code: A representation; in computers, instructions written to perform an action. Source code is the set of instructions in the application program that is fed into a compiler that produces files the computer can understand and execute (run). In healthcare, code refers to the representation of terms in a classification and/or vocabulary.

Commodity: An article of trade or commerce, especially a product that is essentially the same from one vendor to another.

Compliance: The process of establishing an organizational culture that promotes the prevention, detection, and resolution of instances of conduct that do not conform to federal, state, or private payer healthcare program requirements or the healthcare organization's ethical and business policies.

Components: Self-contained modules of mini-applications that are an outgrowth of objected-oriented programming. Components provide an easy way to expand, modernize, or customize large-scale applications because they are reusable and less prone to bugs.

Computer physician order entry (CPOE): Also called computer provider order entry, the process by which a caregiver authorized to place orders for a patient using a computer system, ideally supported by alerts and reminders. Orders then are communicated to the ancillary departments to which they are directed. CPOE is intended to improve patient safety and reduce medication errors through more accurate, complete, and legible orders.

Computer-based patient record (CPR): A term coined by the Institute of Medicine's Patient Record Study Committee in 1991 and used to describe electronically maintained information about an individual's lifetime health status and healthcare that resides in a system designed to support users by providing accessibility to complete and accurate data, alerts, reminders, clinical decision support systems, links to medical knowledge, and other aids. This term is currently being replaced with electronic health record (EHR).

Confidentiality: The act of limiting disclosure of private matters; maintaining the trust an individual has placed in someone who has been entrusted with private matters. Also, it is the status accorded to data or information indicating that it needs to be protected against theft or improper use and must be disseminated only to others authorized to have it.

Confounding variables: In statistical analysis, a function that introduces erroneous values that appear to be correct.

Consensus: A situation in which there is willingness to proceed with one choice where different options are available. Consensus does not assume total agreement or acceptance by everyone but, rather, the respect for forward progress with a specific plan or direction.

Consent: The agreement of an individual for a given action relative to the individual. Consent may be expressed in an oral or written agreement or implied through action that demonstrates consent. Informed consent refers to the validity of a consent; an informed consent follows a careful explanation of what one is agreeing to.

Consumer: A person buying goods or services. In healthcare, the consumer may be a patient, client, resident, or other recipient of healthcare services.

Contextual: The condition of depending on the parts of a written or spoken statement that precede or follow a specified word or phrase and can influence its meaning or effect.

Contingency plan: The preparation made for responding to a system emergency. A contingency plan includes performing backups, preparing critical facilities that can be used to facilitate continuity of operations in the event of an emergency, and recovering from a disaster.

Continuum of care: The full range of healthcare services from lowest to highest intensity.

Controlled vocabulary: A predefined set of terms and their meanings that may be used in structured data entry or natural language processing to represent expressions.

Conversion strategy: A high-level plan for changing paper-based data and manual processes into electronic.

Cost–benefit analysis: The comparison of system costs against system benefits to determine the value of the system.

Cryptography: The art of keeping data secret, primarily through the use of mathematical or logical functions that transform intelligible data into seemingly unintelligible data and back again.

Customer service: The function of attending to existing customer needs (such as positively impacting their experience with the organization and properly handling complaints), gaining new customers, and retaining old customers.

Dashboard: A software program that integrates various measures into a single view.

Data: A sequence of symbols that have limited meaning without context and further processing. A data element is the smallest unit of a fact or value that is stored in a computer. Data are the raw material of information, which is data that have been processed to produce something that was not known before.

Data architecture: The structure of data, how it is represented, and how it is stored. *See also* information infrastructure.

Data backfill: The process of entering data from prior, paper-based records to achieve a more complete electronic record upon start-up of a new computer application.

Data comparability: The standardization of vocabulary such that the meaning of a single term is the same each time the term is used. Data comparability produces consistency in information derived from the data.

Data conversion: The task of moving data from one data structure to another, usually at the time of a new system installation.

Data dictionary: A descriptive list of the data elements to be collected in an information system or database to ensure consistency of definition and use.

Data Encryption Standard (DES): A private key encryption algorithm adopted as the federal standard for the protection of sensitive unclassified information and used extensively for the protection of commercial data as well.

Data integrity: The property that data have not been altered or destroyed in an unauthorized manner or by unauthorized users; a security principle that keeps information from being modified or otherwise corrupted either maliciously or accidentally.

Data mart: A well-organized, user-centered, searchable database system, usually drawing data that are specific to a user's needs from a data warehouse.

Data mining: The process of extracting information from a database and then quantifying and filtering discrete, structured data.

Data model: An abstraction of real conditions used to design definitions of fields and records, and their relationships in a database. By understanding the data model, a database administrator can enforce accuracy and integrity constraints.

Data repository: A database with an open structure that is not dedicated to the software of any particular vendor or data supplier, where data from diverse sources are stored so that an integrated, multidisciplinary view of the data can be achieved; also called central data repository (CDR) or clinical data repository (CDR), if related specifically to health-care data.

Data retrieval strategy: The process of determining the most appropriate methods for viewing and comprehending data. Results retrieval is the computer application of viewing laboratory and other diagnostic study results.

Data set: A group of data elements relevant for a particular use.

Data store: A real-time-sensitive, operationally oriented form of data warehousing, retaining small amounts of key indicators to run day-to-day processes.

Data structure: The form in which data are stored, as in a file, a database, a data repository, and so on.

Data warehouse: A database of information that is optimized for analysis across a population of data. Data stored in the warehouse are specially classified and labeled for appropriate use. The warehouse is designed to identify trends and support the creation of knowledge, not for day-to-day transactions.

Data-processing model: The simple representation of computer functions from input, through processing, to output and storage.

Database: A collection of data structured in logical relationships within a computer system. Flat-file databases allow users to work with only one data table or set of fields at a time, whereas relational and other newer types of databases relate tables to one another and perform complex processing.

Database management system (DBMS): Computer software that enables a user to create, modify, delete, and view the data in a database. A data warehouse management system (DWMS) is software that manages a data warehouse.

Decision support: *See* clinical decision support system.

Default: The status to which a computer application reverts in the absence of alternative instructions.

De-identify: The act of removing from a record or set of data, the data elements (specified by HIPAA) to remove the ability to identify an individual in order to protect his or her confidentiality. *See also* limited data set.

Device driver: Software that controls specific hardware, such as the printer driver that ensures that the computer directs printing instructions appropriate to the type of printer to which it is connected.

DICOM (Digital Imaging and Communications in Medicine): A standard protocol for exchanging medical images among computer systems.

Digital: A data transmission type based on data that have been binary encoded.

Digital signature: A means to guarantee the authenticity of a set of input data in the same way that a written signature verifies the authenticity of a paper document; a cryptographic transformation of data that binds a message to a recipient of data to authenticate the identity of the sender.

Digital versatile disc (DVD): A storage medium ideal for multimedia. DVDs and CDs use a laser substance to store data, in comparison to older media that are magnetic, such as floppy disks.

Digitized signature: A scanned image of a written signature.

Disclosure: The act of making information known; the release of confidential health information about one person to another person. Disclosure does not imply authorization or lack of authorization.

Discrete data: Data that may be represented as separate and distinct values.

Disease management: A more expansive view of case management in which patients with the highest risk of incurring high-cost interventions are targeted for standardizing and managing care throughout integrated delivery systems.

Disk mirroring: The creation of an exact copy of one disk from another, for backup.

Document imaging: The practice of scanning written or printed paper into a system for later retrieval of the document or parts of the document if parts have been indexed. If optical character recognition (OCR) is used, individual characters can be individually processed using, for example, word processing software.

Documentation: The recording of pertinent healthcare findings, interventions, and response to treatment as a business record and form of communication among caregivers.

Due diligence: The actions associated with making a good decision, including investigation of legal, technical, human, and financial predictions and ramifications of proposed endeavors with another party.

Electronic health record (EHR): The current term that is used to refer to computerization of health record content and associated processes.

Electronic medical record (EMR): A term that may be treated synonymously with computer-based patient record and/or electronic health record; often used in the United States to refer to an EHR in a physician office setting or a computerized system of files (often scanned via a document imaging system) rather than individual data elements.

Electronic signature: The application of a password or other form of authentication to an electronic document or file that identifies a person or computer device but does not provide non-repudiation.

Electronic signature authentication (ESA): The process of affixing an electronic (not necessarily digital) signature to a record.

E/M coding: Evaluation and management coding contained in *Current Procedural Terminology, Edition 4 (CPT-4),* developed by the American Medical Association and used for documenting physician services for billing purposes. The codes represent the level of service performed by the physician and have been developed into application programs that can be used to prompt physicians for documentation to support the level of service rendered.

Employer identification number (EIN): The federal tax identification number of a business; designated in HIPAA as the standard identifier for employers.

Encoder: In this reference, a computer program that helps assign diagnostic or procedural codes according to the rules of the coding system. The term may have broader meaning outside healthcare to encompass the assignment of symbols (codes) to any set of data.

Encryption: The process of transforming text into an unintelligible string of characters that can be transmitted over communications media with a high degree of security and then decrypted when it reaches a secure destination. *See also* cryptography.

Enterprisewide master person index (EMPI): A database of patients, their identifying information, and their medical record numbers that may be accessed across an enterprise. Ideally, a common numbering system would be used but is not required.

Enterprise resource planning (ERP): The use of software tools to automate tasks and track data generated by specific departments (primarily finance, inventory, and human resources) in order to optimize resource utilization. ERP is similar to and may complement supply chain management, which is a strategy for electronically linking supply chains, inventories, human resources, and sales forces to reduce inventory glitches, manage distribution, and anticipate future supply needs.

Evidence-based medicine: The term often used to describe clinical decision support, reflecting the notion that such support is based on evidence of best practices rather than an arbitrary set of rules.

Executive decision support: The use of statistical and other analyses on data to converge information and provide knowledge to assist in the management of organizations.

Executive decision support system: A system designed to combine financial and clinical information for use in the business affairs of the healthcare organization.

Executive management: Chief officers of the organization.

Expert system: The term sometimes used to describe artificial intelligence in medicine, in which a highly sophisticated computer system makes a decision to take action independent of the cognitive intention of the human user. It also may be used to describe any system that provides knowledge for decision making.

Extranet: Connections of private Internet networks outside an organization's firewall that use Internet technology to enable interenterprise collaborative applications.

Fee-for-service: A method of reimbursement where prices (fees) for healthcare services are charged, rather than a fixed rate as specified by a payer. (*See* managed care.) Discounted fee-for-service is similar but provides an established discount on the price for a high-volume buyer.

Feeder systems: Information systems that provide data into a comprehensive database. In an EHR environment, information systems that operate at a department level providing data to the EHR. Also called source systems.

Firewall: A computer system or a combination of systems that provides a security barrier or supports an access control policy between two networks or between a network and the Internet.

Fixed cost: A cost that does not vary with the number of units of the item being purchased, in contrast to variable cost in which the cost varies per unit.

Flat-panel display: A technology using liquid crystal display (LCD) or other low-emission substances, once found primarily on laptops and now being used for desktop monitors, large-screen wall monitors, and HDTV.

Formulary: A list of drugs that a pharmacy stocks; under pharmacy benefits management programs, the drugs that are covered under a health plan. Any healthcare organization may have to screen prescriptions against multiple formularies.

FTP (file transfer protocol): A communications protocol that enables users to copy files among computers.

Functional requirements: A statement of the processes a computer system should perform that are used to derive the technical specifications, or desired behavior, of a system.

Gantt chart: A graphic tool used to plot tasks in project management, showing duration of project tasks and overlapping tasks by bars. Some employ two sets of bars per task to display planned and actual task performance.

Granularity: An expression of the relative level of detail or size of the smallest discrete piece of information that can be directly retrieved. Highly granular data are more detailed than nongranular data.

Graphical user interface (GUI): A style of screen interaction with a computer in which typed commands are replaced by manipulations of pictures (icons), buttons, and menus via a navigational device.

Group practice: An organization of physicians who physically share office space and services to achieve economies of scale; often a clinic or ambulatory care center.

Group process: An intragroup activity of relevance to organizational effectiveness that includes elements such as socialization of new members and conflict resolution.

Hacker: An individual who bypasses a computer system's access control by taking advantage of system security weaknesses and/or by appropriating the password of an authorized user.

Halo effect: Bias that occurs when someone allows certain information to influence or prejudice a decision disproportionately.

Hard-coded: Referring to the fact that a screen displays certain content in accordance with software instructions that cannot be manipulated by the user for purposes of changing the content.

Health information management (HIM) professional: An individual who has received professional training at the associate or baccalaureate degree level in the management of health data and flow of information throughout the healthcare delivery system, formerly called medical record technician or administrator.

Health Insurance Portability and Accountability Act (HIPAA): A law passed by Congress in 1996 to provide continuous insurance coverage and reduce insurance fraud and abuse. The Administrative Simplification section requires adoption of standards for

financial and administrative transactions and code sets (for example, claims, eligibility verification), identifiers, privacy, and security. It also called for the National Committee on Vital and Health Statistics (NCVHS) to make recommendations for uniform data standards for the electronic exchange of patient medical record information, from which part of the current emphasis on EHRs is derived.

Health Level Seven (HL7): An ANSI-accredited standards development organization created in the 1980s to develop standards for healthcare computer applications to share data.

Health plan: An entity that provides or pays the cost of medical care, including a group health plan, a health insurance issuer, a health maintenance organization, or any welfare benefit plan such as Medicare, Medicaid, CHAMPUS, and Indian Health Services.

HEDIS (Health Plan Employer Data and Information Set): A set of performance measures that assesses the results that health plans actually achieve; developed by the National Committee for Quality Assurance (NCQA), which provides an accreditation service for managed care organizations.

Help desk: A central access point to information systems support services that attempts to resolve technical problems, sometimes with the use of decision-making algorithms, and tracks problems until their resolution.

Hospital information system (HIS): A set of computer systems used by hospitals for performing various administrative and financial transactions.

House staff: Medical doctors who have completed their initial education and earned a doctoral degree and then obtain specialized training in hospitals affiliated with a house staff training program.

HTML (Hypertext Markup Language): A standard way of displaying information that allows the user to launch from an icon or word in one document to another document or Web site that has been programmatically linked to it.

HTTP (Hypertext Transport Protocol): The communications protocol that enables use of hypertext linking.

Human–computer interface: The device used by humans to access and enter data into a computer system, such as a keyboard on a PC, personal digital assistant, voice recognition system, and so on.

Icon: A symbol provided on a computer screen that, when activated, performs a specific function.

Image data: Data that have been scanned into a computer.

Impact analysis: A collective term used in this book to refer to any study that determines the benefit of an EHR, including cost-benefit analysis, return on investment, benefits realization study, or qualitative benefit study.

In-basket: A function of a computer system that tracks the tasks needing to be performed by an individual user.

Inference engine: A specialized computer program that tries to match conditions in rules to data elements in a repository. When a match is found, the engine "fires," or executes, the rule, which results in the occurrence of a specified action.

Informaticists: Persons who have studied and practice in the field of informatics.

Informatics: A field of study that focuses on the use of technology for improving access to, and utilization of, information. Health informatics is the broadest view of informatics in healthcare. Medical and nursing professions also have fields of informatics that focus on those respective domains. Consumer health informatics is the study, development, and implementation of computer and telecommunications applications and interfaces designed to be used by health consumers. It is the effort to combine healthcare education with the content of the consumer's healthcare information.

Information access management: The policies and procedures for authorizing access to data and functions of an electronic information system.

Information infrastructure: The underlying framework associated with the manner in which data are processed into useful information.

Infrastructure: The underlying framework and features of a computer system that processes data and information.

Install base: The number of clients for which a vendor has installed a system, as opposed to the number of clients for which a vendor is in the process of selling a system.

Institute of Electrical and Electronic Engineers (IEEE): A standards development organization that has created standards that support the exchange of information with medical devices, wireless devices, and other hardware.

Institute of Medicine (IOM): A component of the National Academy of Sciences that is a prestigious group composed primarily of physicians who conduct studies and advise Congress on matters pertaining to healthcare. In the mid-1980s, the physicians became interested in studying how to improve the health record in light of new technologies, both for the good of the industry and in order to ensure access to more and better data with which to conduct their studies. They sought funding from professional societies, healthcare vendors, and others, including the American Health Information Management Association; convened a committee to carry out the study; and released a report in 1991 that coined the term "computer-based patient record," which became a landmark work on the topic. In 1997, the IOM supported a review of the work and issued a revised edition that supported the original work and findings.

Institutional Review Board (IRB): A group of individuals who, following strict guidelines, review and approve research on human subjects (as designated by federal regulations).

Integrated delivery network (IDN): Also called integrated delivery system (IDS), a consolidation of different types of healthcare organizations to improve competitive advantage for the whole and to provide healthcare across all levels of intensity of care in order to improve use of healthcare resources.

Integrated services digital network (ISDN): A network system that transmits voice, data, and signals digitally and with significantly increased bandwidth compared to traditional T1 lines.

Integration: The complex task of ensuring that all the elements and platforms of an information system communicate and act as a uniform entity. This requires communication

protocols, interfaces, standards, and cooperative human efforts. An interface allows two computer systems to exchange data, but not necessarily in the same format or with the same processing features, which makes it less desirable than full-system integration.

Integrity: *See* data integrity.

Intellectual property: A legal term that refers to creative thoughts. When such thoughts generate a unique solution to a problem, they may take on value and can thus become a commodity.

Interactive voice response: An automated call handler that can be configured to automatically dial a log of callers and deliver appointment reminders, lab results, and other information when a person answers the phone.

Interface: The zone between different computer systems across which users want to pass information. Emerging standards, common languages, interface engines, and repositories are means of facilitating the exchange of information across systems.

Interface engine: A computer program that isolates the task of transferring data from one database to another.

International standards organization (ISO): An organization that establishes standards in many different areas for many industries so that products and services can be exchanged globally. The ISO has established an Open Systems Interconnection (OSI) model for standard worldwide communications.

Internet: A worldwide network of interconnected computers to which anyone with a connection may attach and navigate. A portion is called the World Wide Web (WWW), which is a resource that connects large databases and servers to provide electronic mail, education, research, and business.

Internet Engineering Task Force (IETF): A group that reviews and issues Internet standards.

Internet service provider (ISP): A company that provides connections to the Internet.

Interoperability: The ability, generally by adoption of standards, for systems to work together.

Intranet: Private Internet networks that have their servers located inside a firewall, or security barrier, so that the general public cannot gain access to them.

Issues management: The process by which issues, such as problems, delays, cost overruns, and so on (such as in an EHR implementation) are identified, logged, assigned for corrective action, tracked, escalated when necessary, and documented as resolved.

Key: In cryptography, a secret value used to encrypt and decrypt messages. A private key in an asymmetric, cryptographic algorithm is the key restricted to one entity. A public key in an asymmetric, cryptographic algorithm is the key made publicly available to "unlock" the cryptographic message. In a symmetric cryptographic algorithm, only one key is used to encrypt and decrypt.

Key performance indicators: Quantifiable measurements, agreed to beforehand, that reflect the critical success factors of an organization.

Knowledge management: The process in which data are acquired and transformed into information through the application of context, which in turn provides understanding; also, a management philosophy that promotes an integrated and collaborative approach to the process of information asset creation, capture, organization, access, and use.

Knowledge sources: Various types of reference material and expert information that are compiled in a manner accessible for integration with patient care information to improve the quality and cost-effectiveness of healthcare provision; also called knowledge [data]bases.

Learning curve: The time required to acquire and apply certain skills so that new levels of productivity and/or performance exceed prelearning levels (productivity often is inversely related to the learning curve).

Legacy system: A computer system that utilizes older technology but can still perform optimally. Legacy systems are affectionately referred to as "systems that work."

Lexicon: The vocabulary of a particular language.

Likert scale: An ordinal scaling and summated rating technique to measure attitudes. The scale of 1 to 5 is used to rate strong disagreement (1), through neutrality (3), to strong agreement (5).

Limited data set: In HIPAA, identifiable patient data that have been stripped of most, but not all, identifiers. May be used for public health, operations, and research purposes and only with a data use agreement.

Linux: A freeware UNIX-like operating system.

Logical Observation Identifiers, Names and Codes (LOINC): A database protocol aimed at standardizing laboratory and clinical codes for use in clinical care, outcomes management, and research, developed by the Regenstrief Institute for Health Care.

Longitudinal: Pertaining to a research design in which the same subjects are observed repeatedly over a long period of time. Often used in the context of an EHR to reflect the entire health history of an individual across his or her lifespan and including data from multiple providers.

M technology (formerly Massachusetts General Hospital Utility Multi-Programming System [MUMPS]): An operating system developed more than twenty-five years ago and still widely used today that used "write once, run anywhere" characteristics. It is similar to today's Java programming language, which can run on any platform using a Java Virtual Machine (JVM).

Mainframe: A computer architecture built with a single central processing unit to which (dumb) terminals (devices for accessing and entering data without any processing capability) and/or personal computers (which are then referred to as terminal emulators) are connected. All processing takes place in the CPU, and the terminals serve only to capture and retrieve data. Mainframe systems tend to be considered legacy systems and are now being replaced by many PCs in a client/server architecture or by PCs connected to one another through a network.

Managed care: A generic term for reimbursement and delivery systems that integrate the financing and provision of healthcare services by means of entering contractual agreements

with selected providers to furnish comprehensive healthcare services and developing explicit criteria for the selection of healthcare providers, formal programs of ongoing quality improvement and utilization review, and significant financial incentives for members to use those providers associated with the plan.

Management services organization (MSO): A legal entity that provides management, administrative, and support services to individual physicians or group practices. An MSO may be a direct subsidiary of a hospital or may be owned by investors.

Map: The process of identifying equivalent terms or concepts in two different classifications or vocabulary systems.

Master person index: A file of basic demographic data about the patients in a healthcare organization or the persons enrolled in a managed care organization and the identifiers assigned to those patients or persons to link them with their health records.

Medical information bus (MIB): The part of the IEEE standard that provides open integration standards for connecting electronic patient-monitoring devices with information systems.

Medical record: The compilation of all documentation concerning a person's healthcare in a given healthcare organization; also called a patient record, a health record, or chart. A longitudinal (lifetime) health record would be a virtual record or linkage of all healthcare and health status documentation for a person, regardless of where the documentation took place. Many view a longitudinal (lifetime) health record to be the goal of the EHR.

Medication error: An error made in ordering or administering medication to a patient. Not all medication errors lead to adverse drug events (ADEs) but have the potential to do so.

Messaging standards: Standard protocols that assist in the exchange of data between two disparate systems.

Meta-analysis: The process of studying like factors when conducting an analysis of trends.

Metadata: Data about data; the characteristics that describe data to permit a clearer understanding of the meaning and to achieve greater reliability of the quality of information. A data model often includes metadata but describes relationships of different data elements, with their metadata, within an information system. A data dictionary may house data with their metadata but is not dependent upon any one data model.

Method: A way of performing an action or task.

Metrics: A defined means to measure a process, often used in measuring benefits of an EHR.

Middleware: A bridge between two applications, or the software equivalent of an interface.

Migration path: The series of steps required to move from one situation to another. An EHR migration path would describe the systems required to be in place to move from a paper-based health record to a computer-based patient record.

Model: A representation of something, such as a process.

Minimum necessary: A stipulation of the HIPAA privacy rule that requires healthcare facilities and other covered entities to make reasonable efforts to limit the patient-identifiable information they disclose to the least amount required to accomplish the intended purpose for which the information was requested.

Mission critical: A task or process that relates to the fundamental purpose of an organization. In healthcare, an EHR is considered mission critical when it is the sole source of documented information about a patient.

Multimedia: The capability of a computer to process data, voice, image, and motion (video) to communicate through a workstation.

Multipurpose Internet mail extension (MIME): A standard developed for the transmission of nontextual information via e-mail. MIME attachments must be decoded by user e-mail programs through a simple mail transfer protocol (SMTP) gateway (bridge between systems).

National Committee on Vital and Health Statistics (NCVHS): A statutory advisory committee to HHS. In its fifty-plus years of history, it has developed vital records reporting systems and uniform data sets, and, most recently, was tasked under HIPAA to provide public oversight.

National Council for Prescription Drug Programs (NCPDP): An organization that develops standards for exchanging prescription and payment information.

National health information infrastructure (NHII): A concept proposed by the National Committee on Vital and Health Statistics (NCVHS) that would provide a framework for the exchange of patient information across the continuum of care for treatment purposes, population health, and research.

National Library of Medicine (NLM): The world's largest medical library, it is a branch of the National Institutes of Health. Many of its databases are available to the public on the Web. It is the source of the Unified Medical Language System (UMLS) designed to help health professionals and researchers retrieve and integrate electronic biomedical information from a number of sources.

National provider identifier (NPI): Under HIPAA, replaces the unique physician identifier number (UPIN) for identifying all providers, primarily for billing services under Medicare.

Natural language processing: The automatic extraction of coded medical data from free text. In this way, clinicians do not need to alter the way in which they express their findings or document their decisions, but the individual data elements can be processed.

Navigational device: A computer device used to move through the parts of a screen and to activate various commands. Navigational devices may include a mouse, keypad, scroll keys, and so on.

Net present value (NPV): A formula used to assess the current value of a project when the monies used were invested in the organization's investment vehicles rather than expended for the project. This value is then compared to the allocation of the monies and the cash inflows of the project, both of which are adjusted to current time.

Network computer: A type of thin client; a PC with a CPU, but no significant storage, that is used to run programs on servers over a network rather than from programs stored on a hard disk.

Networking: The use of specific technology to connect disparate systems so they may share information.

Nonrepudiation: A process that positively identifies the sender of a computer message so that the sender cannot deny sending the message.

Object request broker (ORB): The messenger at the heart of the object-oriented framework that acts as a relay station between client and server.

Object-oriented framework: A new way of programming and representing data using commands that act as small, self-contained instructional units that may be combined in various ways to produce larger programs.

Online analytical processing (OLAP): A data access architecture that exploits multidimensional data structure to allow the user to drill down into the data by selecting and summarizing them along any combination of their dimensions and permitting the retrieval and summary of large volumes of data; also called online/real-time analytical processing.

Online transaction processing (OLTP): The real-time processing of day-to-day transactions from a database.

Open architecture: A framework based on nonproprietary components that enhances the ability to connect various devices and systems.

Operations analysis: The process of studying an organization's operations for improvement. May also be called process improvement or may focus on broader functions than specific methods.

Optical character recognition (OCR): The technology of reading text by electronic means and converting it to digital data.

Order communication: The sending of an order entered into a computer to the ancillary areas that will fulfill it.

Order entry: The use of the computer to record and initiate the transmission of a physician's order. Unless designated as physician or provider order entry, the entry may be performed by nonphysician personnel. *See also* computer physician order entry.

Outcomes analysis: An evaluation of the end results of treatment or intervention, compared to preestablished criteria defining desired outcomes.

Outsourcing: The use of nonstaff, or contracted, persons to perform organizational work. Outsourcing is used to supplement staff, to acquire staff support more inexpensively or at alternative times when it is not possible to hire staff, or when special expertise is required.

Ownership: The generally accepted principle that the patient's health record is maintained and owned by the healthcare organization that creates it, but the patient has certain rights of control over the release of patient-identifiable (confidential) information subject to law.

Password: A sequence of characters an individual provides to a system for purposes of authentication.

Patient access: The provision of information from the patient's health record to the patient, which may be direct or in summary form.

Patient access system: The computer application formerly referred to as Registration/Admission-Discharge-Transfer (R-ADT) used to record patient demographics and activity when the patient accesses services within the provider setting.

Patient care charting: Typically, the process of documenting progress notes, assessments, and other information related to the direct care of the patient in the HER; sometimes limited to nursing documentation.

Patient medical record information (PMRI): The term used in HIPAA to describe the electronic exchange of health information for which the National Committee on Vital and Health Statistics was to make recommendations. Although many consider the concept to be generally equivalent to the EHR, in developing the HIPAA legislation Congress did not want to call for the requirement of adopting a specific technology.

Patient safety: Initiatives designed to prevent adverse outcomes from medical errors and other actions that may contribute to problems or adverse events in the care of patients.

Payback period: A financial method used to evaluate the value of a capital expenditure by calculating the time frame that must pass before inflow of cash from a project equals or exceeds outflow of cash.

Performance warranties: In an information system contract, assurances that the system will work as specified and intended.

Personal digital assistant (PDA): A small computer that fits in a pocket or purse with somewhat more limited capability, generally used for personal schedule management and as an address book, although functions have recently been expanded to E/M coding and other documentation aids. PDAs are beginning to include wireless connections, especially with the new IEEE standard 802.11 for interoperability of wireless networking products from different vendors.

Personal health record (PHR): A record maintained by or for direct patient access.

PERT (program evaluation review technique) chart: A project management tool that diagrams a project's timelines and its tasks and their interdependencies.

Physician practice management (PPM): Software that automates a physician office's patient appointment scheduling, registration, billing, and payroll functions. Many products also provide electronic data interchange (EDI) for filing claims and electronic funds transfer (EFT), as well as methods for automating the gathering and storing of clinical information.

Physician profiling: Software that enables provider and payer organizations to monitor how and with what resources physicians are treating patients for quality improvement and utilization management. Typically, claims data have been used in these systems, but more recently, physician profiling has been linked to EHRs to provide greater depth of data and a more reliable approach.

Physician–hospital organization (PHO): An organization formed by hospitals and physicians that allows for cooperative activity while allowing participating parties to have a level of independence. Such an organization usually is formed to pursue managed care contracts.

Pick list: A list of variables from which to select discrete data for recording information in a computer system.

Picture archiving and communication system (PACS): An integrated computer system that obtains, stores, retrieves, and displays digital images; in healthcare, radiologic images.

Platform: The combination of hardware and operating system on which an application program can run. An operating system causes the computer machinery to work. Application programs are instructions that cause the computer to perform specified actions for specific types of projects. Collectively, operating system and application programs are referred to as software. In reference to platform, an example would be that a PC (by default understood to be an IBM® or IBM clone) with a Windows® operating system cannot (easily) run programs designed for an Apple® computer with a Macintosh® operating system. Some application programs run on multiple platforms and thus are cross-platform programs. Other programs must be converted into, or "ported" onto, different platforms in order to run properly.

Plug-and-play: Adapter card hardware that sets connections through software rather than hardware, making hardware easier to install.

Point-and-click: A means of data entry in which the user moves the computer's cursor by way of a mouse, up-and-down arrows, or some other pointing, or navigational, device to the desired icon or data element and "clicks" on it to accept it as a link or to select the data element.

Point-of-care system: A computer system that captures data at the location (for example, bedside, exam room, or home) where the healthcare service is performed.

Predictive modeling: A statistical analysis in which past data are used to anticipate the description of a future state.

Privacy: The right of an individual to control disclosure of personal information.

Privacy Act of 1974: The act that granted people certain rights to information collected about them by the federal government.

Privilege: A right granted to a user, program, or process that allows access to certain files or data in a system.

Problem list: A listing of illnesses, injuries, and other factors that affect the health of an individual, usually identifying their time of occurrence or identification and resolution, if any; also called summary list or patient summary.

Process: A systematic series of actions taken to produce a product or service.

Process improvement: The review and analysis of methods performed to conduct procedures and carry out policies in order to enhance their effectiveness and/or the efficiency with which they are performed; often used prior to or during a computer system implementation to ensure successful implementations.

Productivity improvement: The process of using technology to make work easier.

Profit: The difference between revenues and expenses used to build reserves for contingencies and long-term capital improvements; also called net income.

Pro forma: An estimate.

Progress note: The documentation describing the observations and interventions performed for a patient when a clinician is reviewing the patient's status, in contrast to graphic recordings of periodically taken vital signs, intake/output records, and other patient monitoring data. Depending on the intensity and level of service, progress notes may be written several times during a day of hospitalization—upon a patient's visit to a clinic, upon a nurse's visit to a patient's home, and so on.

Project management: A formal set of principles and procedures that help control the activities associated with implementing a usually large undertaking to achieve a specific goal, such as an EHR project. Projects have project executives, managers, plans, sponsors, status reports, teams, time lines, reviews, and vision.

Protected health information (PHI): All patient-identifiable health information, whether oral or recorded in any form or medium, electronic or not, that is created or received by a healthcare provider or another entity subject to the requirements of the Health Insurance Portability and Accountability Act of 1996.

Protocol: An agreed-on standard. In networks, a protocol is used to address and ensure delivery of packets (of data) across a network. In healthcare, a treatment protocol is a detailed plan of care for a specific healthcare condition based on investigative studies.

Providers: A term that often refers to either healthcare organizations or clinicians licensed to bill for healthcare services (such as physicians, and certain other healthcare professionals, such as midwifes, physical therapists, etc.

Pull-down menu: The design of a data-entry screen of a computer in which categories of functions or structured data elements may be accessed through that category element.

Quality improvement (QI): The continuous monitoring, evaluation, and improvement of services.

Quantifiable benefits: Benefits that can be reduced to a numeric representation.

Quantitative benefits: Benefits that accrue specifically to a given (computer system) implementation and are described by monetary value.

Query: The process of making a logical inquiry or request from a database.

RAID (Redundant Array of Inexpensive Disks): A data backup method of ensuring data availability.

Read: An operation involving the flow of information from an object to a subject, without allowing alteration (which is the "write" function) of the information.

Readiness assessment: An evaluation of the status of a healthcare organization's infrastructure and culture in order to estimate the potential for successful implementation of an EHR.

Real time: The processing of data that takes place as the event occurs.

Redundancy: The concept of building a backup computer system that is an exact version of the primary system and can replace it in the event of failure.

Release of information (ROI): The authorized disclosure of documentation containing patient-identifiable information to a third-party requestor.

Reliability: A measure of consistency of data items based on their reproducibility and an estimation of their error of measurement.

Reminder: A prompt based on a set of rules that displays on the computer workstation. It is distinguished from an alert or alarm as usually being similar to a recommendation.

Remote connectivity: The process of connecting users from locations away from the local-area network.

Report writer: A software aid that helps users create reports from data stored in computer systems.

Repository: A data structure in which data are stored for subsequent use by multiple, disparate systems.

Repudiation: A situation in which a user or a system denies having performed some action, such as modifying information. Nonrepudiation services are countermeasures to repudiation in the security environment.

Research methodology: A formal process of study that manages data to ensure accurate analysis.

Resolution: The degree of sharpness of a computer-generated image as measured by the number of dots per linear inch on a printout or the number of pixels across and down a display screen.

Retention: The maintenance and preservation of information in some form.

Return on investment (ROI): The financial analysis of the extent of value a major purchase will provide.

Risk: The aggregate effect of the likely occurrence of a particular threat. In security, a risk assessment may be performed to determine a system's vulnerabilities. A risk analysis may be performed to evaluate the level of security services required to counteract a security threat.

Risk sharing: An agreement in which a vendor assumes at least a part of the responsibility, from a financial perspective, for the successful implementation of an EHR.

RSA: A public key crypto-system, invented and patented by Ronald Rivest, Adi Shamir, and Leonard Adelman, based on large prime numbers. RSA is the best-known asymmetric algorithm.

Rules engine: A computer program that applies sophisticated mathematical models to data that generate alerts and reminders to support healthcare decision making.

Scalable: The measure of a system to grow. It is not quantifiable but is relative to various measures of size, speed, number of users, volume of data, and so on.

Scope creep: A process in which the scope of a project grows while the project is in process. It is the bane of project managers because it virtually guarantees that a project will be over budget and late.

Scripting language: A set of computer instructions that are used to process Web-based instructions (such as for designing a home page on the Internet).

Search engine: A software program used to search for data in databases. An example of such a tool is structured query language (SQL).

Secondary record: A record that is derived from the primary record and contains selected data elements.

Security: The means to control access and protect information from accidental or intentional disclosure to unauthorized persons and from alteration, destruction, or loss. Security should embody auditing, educational/awareness programs, management, mechanisms, policies, and services and targets.

Semantics: The meaning of a word or term.

Sensitivity label: A security level associated with the content of the information. Some believe certain types of information should be labeled as especially sensitive due to their potential for causing harm to the patient or others; others believe the mere act of labeling information as especially sensitive sets up inappropriate alerts and that all healthcare information should be treated as especially sensitive.

Servers: *See* client/server

SGML (Standard Generalized Markup Language): An ISO standard that establishes rules for identifying elements within a text document. After being "tagged," or identified, the elements can be further interpreted by other markup languages, such as HTML, XML, and others.

Shareware: Software that is freely available from others, often on the Internet, for which a nominal fee is paid. Freeware is similar but is available with no fee whatsoever.

Single sign-on: Technology that allows a user access to all disparate applications through one authentication procedure, thus reducing the number and variety of passwords a user must remember and enforcing and centralizing access control.

Smart card: A credit card–sized piece of plastic on which is imbedded a computer chip that may house data and processors for manipulating the data. Smart cards are popular in Europe for maintaining health record data. In the United States, magnetic stripe cards are popular for storing demographic and insurance information, but smart cards have not been widely adopted.

Smart text: The use of a macro, code, or key set of characters to initiate data entry of predefined text.

Sniffer: A software security product that runs in the background of a network, examining and logging packet traffic and serving as an early warning device against crackers; also called network analyzer or protocol analyzer.

SNOMED (Systematized Nomenclature of Human and Veterinary Medicine): A comprehensive clinical vocabulary developed by the College of American Pathologists that is the most promising set of clinical terms available for a controlled vocabulary for healthcare.

Source systems: *See* feeder systems.

Speech recognition: *See* voice recognition.

SQL: *See* search engine.

Standard: A method, protocol, or terminology agreed on by an industry to allow proprietary systems to operate successfully with one another.

Standards development organization (SDO): An organization that develops standards through a voluntary, consensus-driven process.

Strategic planning: The act of establishing long-range, broad-based goals for an organization.

Structured data: Documentation of discrete data using a controlled vocabulary rather than narrative text.

Syntax: The format or structure of data.

System build: The process of designing the specific components of an information system during its implementation in a specific setting.

System development life cycle (SDLC): The overall process of developing information systems through a multistep process from investigation of initial requirements through analysis, design, implementation, and maintenance.

TCP/IP (transmission control protocol/Internet protocol): The multifaceted protocol suite, or open standard not owned by or proprietary to any company, on which the Internet runs.

Team building: The process of creating synergy and cooperation in a group focused on a specific aim.

Telemedicine: A telecommunication system that links healthcare organizations and patients from diverse geographic locations and transmits text and images for (medical) consultation and treatment. Teleradiology, telepathology, and other telehealth services are components of an EHR system.

Template: A pattern used in EHRs to capture data in a structured manner.

Terminal: A term used to describe the hardware in a mainframe computer system by which data may be entered or retrieved. Terminals had no processing capability of their own (and often today are referred to as "dumb terminals"). In client/server systems, terminals have been replaced with various forms of computers (called clients).

Terminology: A listing of the proper use of clinical words.

Textual: A term referring to the narrative nature of much of clinical documentation to date.

Thin client: A computer with processing capability (CPU), but no persistent storage (disk memory), relying on data and applications on the host it accesses to be able to process data.

Threat: The potential for exploitation of a vulnerability.

Token: A physical device used to authenticate a computer user.

T1: A digital phone line that can carry data at speeds of up to 1.544 megabits per second.

Topology: In networking terms, the physical or logical arrangement of a network.

Transcription: The act of making a written or typed copy of information from a verbal process, such as dictation.

Tunneling protocol: A protocol that ensures that data passing over a virtual private network are secure; operates as an outer envelope to an envelope with its enclosure.

Turnkey product: A computer application that may be purchased from a vendor and installed without modification or further development by the user organization.

Turnover strategy: A plan for how users will start using a computer system and stop using or incorporate paper-based data.

24/7: Referring to computer availability 24 hours a day, 7 days a week; never shutting down.

UNIX: An operating system developed by Bell Labs in the late 1960s, and one of the best systems for mission-critical applications.

Unstructured data: Narrative data that are not processed uniquely by the average computer system without special tools called natural language processing.

Use case: A technique that develops scenarios based on how users will use information to assist in developing information systems that support the information requirements.

Utilization management (UM): Systems and processes to ensure that facilities and resources, both human and nonhuman, are used maximally and consistent with patient care needs.

Validity: The extent to which data correspond to the actual state of affairs or that an instrument measures what it purports to measure.

Virtual private network (VPN): A network established over a carrier's digital phone lines and dedicated solely to connecting several specific client sites.

Virus: A computer program, typically hidden, that attaches itself to other programs and has the ability to replicate and cause various forms of harm to the data.

Vocabulary: A list or collection of clinical words or phrases and their meanings. *See also* controlled vocabulary.

Voice recognition: Technology that uses voice patterns to allow computers to record voice and automatically translate it into written language in real time. Also called continuous speech recognition.

Vulnerability: A weakness in a system that can be exploited to violate the system's intended behavior.

Web portal: The entry point for authorized persons to access secure data using the Internet.

Wet signature: A signature applied using a pen rather than computer technology.

Web-enabled technology: A computer architecture that utilizes World Wide Web technology (for example, browsers that are client software programs designed to look at various kinds of Internet resources) developed for the Internet to connect systems and display data.

Windows: An operating system product made by Microsoft®. The system is easy to learn and user-friendly because all applications that run on it have a similar, pictorial appearance, and movement among various applications is made available through multiple, simultaneous views.

Work-around: A series of unnatural steps taken to compensate for either poorly performing software or lack of desire to use a computer.

Work flow: The sequence of actions applied to a process to achieve a result; typically crosses organizational units or different steps taken by the same user.

Work flow analysis: A technique used to study the flow of operations for automation; also called operations analysis. Work flow management utilizes document imaging to ensure that documents are accessible throughout the flow of work.

Workstation: A computer that has been designed to accept data from multiple sources to assist in managing information for daily activities and to provide a convenient means of entering data as desired by the user at the point of care; also called intelligent workstation.

World Wide Web: *See* Internet.

XML (Extensible Markup Language): A new version of SGML being developed by the World Wide Web Consortium (W3C) that allows customizable element tags and multiple destinations within a single link.

X12: *See* Accredited Standards Committee X12N.